



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/483,570	01/14/2000	Gary L. Swoboda	TI-28933	8552

23494 7590 08/01/2003

TEXAS INSTRUMENTS INCORPORATED
P O BOX 655474, M/S 3999
DALLAS, TX 75265

EXAMINER

PHAN, THAI Q

ART UNIT	PAPER NUMBER
----------	--------------

2123

DATE MAILED: 08/01/2003

8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/483,570

Applicant(s)
Gary L. Swoboda

Examiner
Thai Phan

Art Unit
2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jun 11, 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3, and 4 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, and 4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

DETAILED ACTION

This Office Action is response to applicant's amendment filed on June 11, 2003. Claim 2 was canceled. Claims 1 and 3-4 are pending in this Office Action.

Drawings.

1. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 12/20/2002 have been approved.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh et al., US patent no. 6,075,941, in view of Sample et al., US patent no. 5,960,191.

As per claim 1, Itoh discloses method of emulation of an integrated circuit including a CPU capable of executing program instruction with feature limitations substantially similar to the claimed invention (Abstract and Summary of the Invention). According to Itoh, the method includes steps of

detecting a predetermined debug event (col. 11, line 57 to col. 12, line 33, for example),

upon detection of the predetermined debug event suspending program execution except for at least one type of interrupt (col. 16, line 23 to col. 18, line 23),
and executing the monitor program during program debugged via at least one type interrupt (cols. 17-19).

Itoh further discloses the emulator (ICE) (14) having control function for monitoring and controlling the operation of the CPU processor via debug interrupt (Summary and Background of the Invention). Even Itoh does not expressly disclose an emulation monitor program, practitioner in the art at the time of the invention was made would have found Itoh ICE emulator program for monitoring and controlling the CPU processor operation as above could obviously imply emulation monitor program as claimed because the monitor program is executed and controlled in the emulator and for the emulator to monitor the operative state of the microcomputer.

Itoh does not expressly disclose selectively assigning control of at least emulation resource of the integrated circuit to one of the serial scan path or the emulation program as claimed. Such feature is however well-known in the art. In fact, Sample (patent 5,960,191) teaches method and system for hardware emulation system including feature of selectively assigning control of emulation resource for the circuit emulation system (col. 3, lines 35-49, col. 19, line 48 to col. 24, line 4), and serially scanning path for emulation resource assignment in order to control power and emulation resources as taught in the Background of the Invention".

This would motivate practitioner in the art at the time of the invention was made to use Sample teaching of hardware emulation system in an integrated circuit in Itoh emulator for

selectively assigning control of emulation resource in order to control power and emulation resources as taught in the background of Sample invention.

As per claim 3, Itoh discloses monitor program for monitoring priority interrupt, which could include privilege input for monitor program, monitoring privilege interrupt input for the emulation program, and assigning resources for emulation program and path tracing circuit.

As per claim 4, Itoh discloses emulation resources and accessing to the emulation resources through read/write data register (Figs. 3-20, col. 8, lines 26-59, cols. 9-13, for example).

Response to Arguments

4. Applicant's arguments with respect to amended claims 1 and 3-4 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's argument that Itoh does not disclose selectively assigning emulation resources to the integrated circuit emulator, the examiner has modified the rejection to the amended claim. Such a feature is however known in the art. In fact, Sample (patent 5,960,191) teaches a method and system for hardware emulation system including the feature of selectively assigning control of emulation resource for the circuit emulation system (col. 3, lines 35-49, col. 19, line 48 to col. 24, line 4), and serially scanning path for emulation resource assignment in order to control power and emulation resources as taught in the Background of the Invention.

This would motivate a practitioner in the art at the time of the invention was made to use the Sample teaching of a hardware emulation system in an integrated circuit in Itoh emulator for selectively assigning control of emulation resource in order to control power and emulation resources.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. US patent no. 6,564,339 B1, issued to Swoboda et al., on May 2003
2. US patent no. 6,567,933 B1, issued to Swoboda et al., on May 2003

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however,

will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai Phan whose telephone number is (703) 305-3812.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703)305-3900.

Any response to this final action should be mailed to:

Box AF

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:


(703) 746-7238, (for Formal communications; please mark "EXPEDITED PROCEDURE"),

Or:

(703) 746-7239 (for Unofficial Fax communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

July 28, 2003


SAMUEL BRODA, ESQ.
PRIMARY EXAMINER